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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,336	11/13/2003	Kenny Chang	JCLA11475	4087
23900	7590	02/21/2006	EXAMINER	
J C PATENTS, INC.			ARENA, ANDREW OWENS	
4 VENTURE, SUITE 250			ART UNIT	PAPER NUMBER
IRVINE, CA 92618			2811	

DATE MAILED: 02/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/714,336

Applicant(s)

CHANG ET AL.

Examiner

Andrew O. Arena

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tao et al. (US 6,316,828) - hereinafter Tao - in view of Stearns et al. (US 5,895,967) – hereinafter Stearns – and Yamaura et al. (US 6,831,360) – hereinafter Yamaura.
3. Examiner has attached a copy of Tao Fig. 6 to which has been added two reference numerals (E1, E2) used for clarity throughout this rejection.

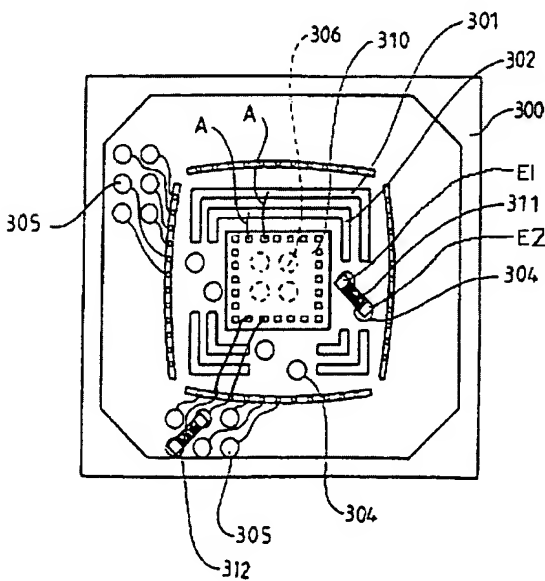


FIG. 6

Art Unit: 2811

4. Regarding claim 20, Tao discloses (Fig. 6) a package substrate (300; col 3 ln 41) adapted to carry a die (310; col 3 ln 46-48) of a wire bonding type (A; col 3 ln 37-38), the package substrate at least comprising:

a substrate (300; col 3 ln 41) having a surface, a power pad (301; col 3 ln 45-46) and a ground pad (302; col 3 ln 46), wherein the surface of the substrate having a die bonding area (310; col 3 ln 46), the power pad and the ground pad disposed outside the die bonding area;

at least one passive component (311; col 3 ln 42 – see 311 in Fig 5) disposed between the power pad and the ground pad (clear in Fig 6), the passive component having at least two electrodes (E1, E2) which are connected to the power pad and the ground pad (col 3 ln 44-46) respectively; and

exposed surfaces of the electrodes (E1, E2) and exposed surfaces of the power pad (301) and a ground pad (302).

5. Further regarding claim 20, Tao differs from the claimed invention in not expressly disclosing “a signal pad.” Stearns discloses (Fig 4) a chip having power, ground, and signal pads (col 6 ln 56-57) connected to corresponding power (46 & 26; col 6 ln 63), ground (44 & 24; col 6 ln 61-62), and signal (48 & signal connection; col 6 ln 64-65) pads on the substrate, all pads disposed outside the die bonding area.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made that the plurality of connection pads on the substrate of Tao include a signal pad, as taught by Stearns; for at least the purpose of providing a signal to and/or from the chip.

Art Unit: 2811

6. Further regarding claim 20, Tao discloses the passive component electrodes are connected to the power pad and ground pad, but differs from the claimed invention in not expressly disclosing "a metal layer formed on exposed surfaces of the electrodes and on exposed surfaces of the power pad, the ground pad, and the signal pad."

Yamaura discloses (Fig 3b) a solder connection (5; col 9 ln 52-57) between substrate mounted passive component (3a; col 9 ln 52-54) with a metal layer (3f,3g; col 9 ln 66-67) formed over the passive component electrode (3d; col 9 ln 64), and a metal layer (4b; col 10 ln 7-8) formed on all the substrate pads (4a; col 10 ln 7-9). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Tao by forming a metal layer on exposed surfaces of the electrodes and on exposed surfaces of the power pad, the ground pad, and the signal pad, as taught by Yamaura; for at least the purpose of enhanced contact conductivity.

7. Further regarding claim 20, the product-by-process limitation "simultaneously formed" has not been given patentable weight. The case law establishing this precedent follows:

"Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

8. Regarding claim 21, Tao discloses a patterned solder mask layer, disposed on the surface of the substrate (col 3 ln 20-22,41), and exposing surfaces of the power pad and the ground pad (304; col 3 ln 20-22). Tao differs from the claimed invention in not expressly disclosing the patterned solder mask exposes the surface of a signal pad. However, Tao as modified by Stearns discloses a signal pad, and it would have been

obvious to expose the surface of said signal pad; for at least the purpose of providing an electrical connection to the signal pad.

9. Regarding claim 22, Tao as modified by Yamaura discloses (Yamaura: Fig 3b) a nickel layer on the electrode (3f; col 9 ln 66) and the corresponding pad (4d; col 10 ln 1-2), and further discloses a gold layer formed on all pads (4b; col 10 ln 7-9).

10. Regarding claim 23, Tao discloses the passive component is a capacitor (311 in Fig 4).

Response to Arguments

11. Applicant's arguments filed 12/21/2005 have been fully considered but they are not persuasive.

12. Examiner concurs that "Yamaura does not disclose, hint, or suggest the feature that 'a metal layer simultaneously formed on exposed surfaces' defined in the independent claim [20], as amended." The rejection of claim 20 in this office action establishes that Tao as modified by Yamaura does disclose "a metal layer formed on exposed surfaces." The cited prior art differs from the claimed invention only by the product-by-process limitation "simultaneously formed." However, the product-by-process limitation "simultaneously formed" has not been given patentable weight, in accordance with the case law precedent established by *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Therefore, the invention as claimed does not patentably define over the cited prior art.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

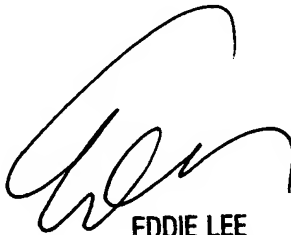
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew O. Arena whose telephone number is (571) 272-5976. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2811

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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